

App. No. 10/509,481
Amendment dated Mar. 30, 2006
Reply to Office Action of Dec. 30, 2005

Docket No. AB-1379 US

REMARKS/ARGUMENTS

The following remarks are in reply to the non-final Office action of 12/30/2005 in the instant application. In light of this reply, reconsideration and further examination of this application are respectfully requested.

On page 2 of the Office action, the Examiner rejected claims 1, 5 and 6 under 35 U.S.C. 102(b) as being anticipated by Kim et al. (U.S. 6,188,452), stating, in pertinent part,

"Kim et al. teaches ... a method of manufacturing a thin film transistor array panel for a liquid crystal display ... comprising ... forming an organic insulating layer by spin-coating an organic insulating material on the protective layer (Col. 4, lines 45-55); [and] surface-treating the organic insulating layer by plasma process using inactive gas" (Emphasis added.)

In light of the remarks that follow, this rejection is respectfully traversed.

Independent claim 1 of the present invention includes the limitations, "forming an organic insulating layer by spin-coating an organic insulating material on the protective layer"; and, "surface-treating the organic insulating layer by plasma process using inactive gas." As particularly pointed out in the instant disclosure at, e.g., par. [0058], the benefit of surface-treating the organic insulating layer is that it improves the adhesiveness between the insulating layer and an indium tin oxide ("ITO") film formed on the organic insulating layer later.

However, and contrary to the Examiner's assertion above, Kim does not teach or even suggest such a limitation. Rather, the surface-treatment in Kim is not even performed on the surface of an organic insulating layer, but rather, on a surface of a semiconductor layer in order to reduce "dangling bonds" on the surface of the semiconductor layer that are exposed between a source electrode and a drain electrode. (Kim, col. 4, lines 42-60.)

Additionally, it should be noted that the surface-treatment in claim 1 of the present invention is carried out after the formation of the organic insulating layer, whereas the surface-treatment in Kim, is performed before the formation of the organic layer to prevent "detachment" of the latter. (Kim, col. 4, lines 63-67, col. 5, lines 1-2.)

As an additional grounds of distinction between Kim and the present invention, claim 1 of the present invention includes the limitations of "depositing a protective layer covering the gate wire or the data wire," and then "forming an organic insulating layer ... on the protective layer." The protective layer prevents the data wire from being damaged during the plasma process surface treatment of the organic insulating layer. However, Kim does not teach or suggest these limitations.

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Further, since Kim does not disclose depositing the protective layer, it necessarily follows that Kim likewise does not teach “patterning the organic insulating layer to form a first contact hole exposing the protective layer opposite the drain electrode” or “patterning the protective layer to form a second contact hole exposing the drain electrode and located inside the first contact hole,” as recited in claim 1 of the present application.

In light of the foregoing remarks, it is respectfully submitted that claim 1, as well as the claims dependent from it, viz., claims 2-7, are patentably distinguishable over Kim, and accordingly, their rejection under 35 U.S.C. 102(b) in light of Kim should be withdrawn.

On page 3, of the Office action, the Examiner rejected claim 2-4 under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. 6,188,452) above in view of Kobayashi et al. (U.S. 5,767,827), stating, in pertinent part,

Kobayashi teaches that the pixel electrode comprises a transparent conductive electrode or a reflective conductive film” (Emphasis added.)

In light of the remarks that follow, this rejection is respectfully traversed.

The deficiencies in teaching of the primary reference, Kim, with respect to claim 1 of the instant application are discussed above, and accordingly, are not repeated here, and further, an examination of Kobayashi reveals that it does not supply any of those deficiencies.

Additionally, and contrary to the Examiner’s assertion above, Kobayashi teaches applying an organic insulation substance (polyimide) onto the surfaces of the pixel electrodes, and then forming a reflective film of the surface of the display panel for planarization purposes. (Kobayashi, col. 1, lines 40-65.) This is substantially different than the present invention, in which the pixel electrodes are formed on the organic insulating layer.

Further, if it is contended that the “passivation film 11” of Kobayashi corresponds to the “organic insulating layer” of the present invention, then it should be noted that Kobayashi’s passivation film is not made of an organic material, but rather, an inorganic material, such as silicon dioxide (SiO₂). (*Id.*)

In light of the foregoing, it is respectfully submitted that the Examiner’s rejection of claims 2-4 under 35 U.S.C. 103(a) over Kim et al. in view of Kobayashi et al. is untenable, and should be withdrawn.

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On page 4 of the Office action, the Examiner rejected claim 7 under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. 6,188,452) above in view of Park et al (6,184,070), stating, in pertinent part,

Park et al. discloses a photo etch step using a photoresist pattern with position-dependent thickness (Col 2, lines 35-45)." (Emphasis added.)

In light of the remarks that follow, this rejection is respectfully traversed.

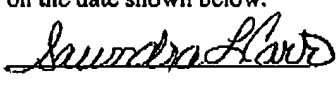
The deficiencies in teaching of the primary reference, Kim, with respect to claim 1 of the instant application are discussed above, and accordingly, are not repeated here, and further, an examination of Park reveals that it, like Kobayashi above, does not supply any of those deficiencies.

The Examiner asserts above that Park discloses "a photo etch step using a photoresist pattern with position-dependent thickness." However, if it is contended that the "planarizing layer" of Park corresponds to the "organic insulating layer" of the present invention, then it should be noted that Park does not anywhere teach or suggest surface-treating the planarizing layer, as taught in, e.g., claim 1 of the present invention.

In light of the foregoing, it is respectfully submitted that the Examiner's rejection of claim 7, which depends from claim 1, under 35 U.S.C. 103(a) over Kim in view of Park is untenable, and should be withdrawn.

In light of the above remarks, it is respectfully submitted that claims 1-7 are allowable over the art of record, and the Applicant therefore respectfully requests that a timely Notice of Allowance be issued in this case.

If there are any questions regarding the above, the Examiner is invited to contact the undersigned at the numbers below.

Certification of Facsimile Transmission	
I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.	
	Mar. 30, 2006 Date of Signature

Respectfully submitted,

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